3 KEY ISSUES RAISED IN COMMENTS

This chapter identifies and discusses a number of key issues that have emerged from comments on the DEIS. These issues are presented here for the purpose of providing a convenient overview of the major concerns raised by the public. DOE identified the key issues because they:

- Involved policy questions, or
- Involved the scope of the analysis,
- Affected the formulation of an alternative,
- Identified a technical deficiency in the DEIS,
- Involved questions about the methodology of the impacts analysis,
- Involved impacts areas of particular concern to commentors, such as air, water, and health,
- Caused a substantive change in the EIS,
- Reflected continuing themes throughout the NEPA review, or
- Were raised by numerous commentors.

DOE has responded to many of the comments by incorporating by reference its discussion of the appropriate key issue set forth below. Where appropriate, some of the key issues are discussed in greater detail in responses to specific comments. DOE has used this approach in order to avoid repeating lengthy responses, to highlight the public's principal concerns, and to present clear and consistent responses to these concerns.

Key Issue 1: Extension of NEPA analysis into Mexico

Several commentors asked DOE and BLM to evaluate the impacts associated with the power plants on the environment in Mexico. The agencies do not agree that such an analysis is appropriate for the following reasons.

As noted in Section 1.3.1.2 of the EIS, NEPA does not require an analysis of environmental impacts that occur within another sovereign nation that result from approved actions by that sovereign nation. Executive Order (E.O.) 12114, "Environmental Effects Abroad of Major Federal Actions," 44 FR 1957 (1979), does not require Federal agencies to evaluate impacts outside the United States when the foreign nation is participating with the United States or is otherwise involved in the action, E.O. 12114 at § 2-3(b). Here, the Mexican government has

been involved in evaluating the environmental impacts associated with the power plants in Mexico and had issued permits authorizing the construction and operation of the two power plants and ancillary facilities. An overview of the permitting of the power plants and associated environmental impacts analysis that was performed by the Mexican government has been added to the EIS as Appendix J. In addition, the Federal action does not affect the global commons (e.g., outer space or Antarctica), and the Federal action does not produce a product, emission, or effluent that is "prohibited or strictly regulated by Federal law in the United States because its toxic effects on the environment create a serious public health risk," or that involves regulated or prohibited radioactive materials.

The Federal action evaluated in the EIS is not to build the power plants, but only to permit the transmission lines to be built in the United States. The agencies' position in this regard (1) is consistent with applicable Federal laws, including the generally held legal presumption that Acts of Congress do not ordinarily apply outside U.S. borders; (2) avoids the appearance of the assertion of extraterritorial control over actions that were approved by and occur within the lands of another sovereign nation; and (3) prevents interference in the foreign relations of the United States. Application of this policy is particularly appropriate where, as here, the power plants are located in Mexico and the foreign sovereign itself has both reviewed the environmental impacts of the projects and approved the projects.

Key Issue 2: Use of significant impact levels (SLs) to evaluate impacts on air quality and human health

Commentors state that it is not appropriate to use U.S. Environmental Protection Agency (EPA) SLs to evaluate the air quality impacts from operating the power plants in Mexico that would use the proposed transmission lines. The commentors state that the use of SLs is inappropriate because SLs, which are expressed in terms of incremental increases in ambient air concentrations, were developed to gauge the impacts of new projects built in attainment areas in the United States under the prevention of significant deterioration elements of the Clean Air Act (CAA). The commentors state that if the projects were built a few miles north on the U.S. side of the border, or if Mexicali was classified with regard to the attainment of U.S. air standards, CAA requirements for nonattainment areas, which are based on annual emission rates, would apply. Therefore, the commentors state, a different test, using emission rate thresholds to evaluate the potential significance of air emissions, should be used. Some commentors conclude that if emission rate thresholds were used as benchmarks, the power plants would be classified as significant sources of air emissions, and therefore, the Final EIS (FEIS) must identify requirements for the power plants, such as additional emission controls or offsets.

In the EIS, DOE and BLM are using the SLs solely as benchmarks against which to evaluate the potential impacts of the power plants on air quality and human health. DOE and BLM are not applying the SLs in any regulatory sense because neither agency has such regulatory authority, even if the requirements of the CAA did apply to the power plants in Mexico, which they do not.

DOE and BLM believe it is preferable to use thresholds based on ambient air concentration increases, that is, the SLs, to evaluate the potential impacts rather than thresholds based on emission rates because air concentration increases are a direct measure of human exposure, whereas emission rates are not. Because SLs are based on the U.S. National Ambient Air Quality Standards (NAAQS), which have a basis in human health impacts, SLs are the most directly applicable standards against which to evaluate impacts to air quality and human health from power plant emissions. Section 4.3.4.4.2 of the FEIS describes the framework of SLs and explains why comparative reference to SLs is appropriate in the context of this NEPA review.

Key Issue 3: The conditioning of permits, enforcement of emission levels

Several commentors questioned how DOE and BLM could be assured that the power plants in Mexico would continue to operate consistent with the assumptions and analyses contained in the EIS (Section 4.3.4.4.1 and Appendix G). Commentors also stated that DOE should place conditions in the Presidential permits requiring that the Termoeléctrica de Mexicali (TDM) and La Rosita Power Complex (LRPC) power plants abide by the same regulatory requirements as if they were constructed within the United States.

At the conclusion of the Presidential permit process, based upon the entire record, including the environmental analysis contained in the EIS, DOE will determine whether the issuance of Presidential permits would be consistent with the public interest. DOE also has the power "to attach to the issuance of the permit and to the exercise of the rights granted thereunder such conditions as the public interest may in its judgement require" (Executive Order 10485, as amended by Executive Order 12038).

Pursuant to that authority, every Presidential permit issued by DOE for the construction, operation, maintenance, or connection of international electric transmission lines contains a condition that prohibits the permit holder from making any physical changes to the permitted transmission line or from changing the way the transmission line is operated without first obtaining permission from DOE. Therefore, if a permit holder connected its permitted transmission lines to power plants that operated substantially differently from the representations made in the permit application and in the associated NEPA analysis, it would constitute a change in the way the transmission lines were operated and would require additional review by DOE.

If permits are granted, DOE will determine whether the public interest, as described in Section 1.2.1 of the EIS, requires the imposition of any additional conditions regarding mitigation measures that would affect the TDM and LRPC power plants. Imposition of such conditions would be addressed in the Record of Decision for each permit application.

Key Issue 4: Definition of the alternatives with regard to the three LRPC Energía Azteca X, S. de R.L. de C.V. (EAX) gas turbines; and inclusion of the EAX-export unit in both the proposed action and no action alternatives

One commentor stated that the EAX-export unit at the LRPC should not be included in the analysis of impacts for the proposed action because the impacts from this unit are not caused by the proposed transmission line, since this unit can be easily switched to other approved connections in Mexico.

DOE and BLM do not agree that the EAX-export unit should be excluded from the analysis of the proposed action. In the analysis of air impacts in the FEIS (Section 4.3.4.4), the contribution of emissions from the EAX-export turbine is included in the totals for both the proposed action and no action alternatives. The EAX-export turbine occupies a unique position at the LRPC because it can, as the commentor notes, provide power to either the proposed transmission line or to the Comisión Federal de Electricidad (CFE) grid in Mexico through existing connections. The CFE grid can supply power to Mexico or the United States via an existing permitted transboundary transmission line. The EAX-export turbine is included in the analysis of impacts for the proposed action because it would be connected to the proposed transmission lines. It is included in the no action alternative because, in the absence of the proposed transmission line, it could (and likely would) be switched to supply power to the CFE grid.

Key Issue 5: Analysis of power plant impacts for all alternatives in terms of the existing plants rather than the hypothetical, "to-be-built" plants analyzed in the Draft EIS (DEIS)

A commentor noted that the district court (in its decision on the earlier environmental assessment) precluded DOE and BLM from considering the fact that the transmission lines have already been built in further environmental analysis, but did not preclude the agencies from considering the fact that the power plants in Mexico had been built and had commenced commercial operations. Further, the commentor stated that the technical feasibility, costs, and effectiveness of the technologies analyzed under Alternative 3, Alternative Technologies, would be better considered in the context of a retrofit to an existing plant.

While the DEIS analyzed the alternative technologies alternative in terms of hypothetical plants, DOE and BLM have since determined that the court's ruling to treat the transmission lines as having never been built does not extend to the existing power plants. This determination allows DOE to perform a more realistic evaluation of the technologies alternative, that is, the retrofit of existing plants, than could have been performed with respect to hypothetical plants.

The EIS now analyzes the alternative technologies alternative, Alternative 3, in terms of a retrofit of technologies to plants that have already been built (Section 2.3), while previous references to "proposed" or "to-be-built" power plants have been changed throughout the EIS to refer to the existing plants.

Key Issue 6: Analysis of dry and parallel wet-dry cooling

Two commentors stated that dry-only cooling or parallel wet-dry cooling as an alternative cooling technology to wet cooling would likely prove to be infeasible in terms of a retrofit to the existing power plants in Mexico. Another commentor reiterated an earlier recommendation made in scoping, that is, that the EIS should analyze a parallel wet-dry cooling technology that would run primarily in dry mode and only be supplemented with wet cooling on the hottest days of the year, resulting in a 90% reduction in water use by the plants.

After considering these comments and the associated technical submittals, DOE has analyzed a wet-dry cooling option that would be a retrofit to the existing power plants and would continue to use the existing wastewater treatment plants and wet cooling systems supplemented with a dry cooling unit. DOE concludes that a retrofit of a dry-only system or a parallel wet-dry system that operates primarily in dry mode with only supplemental wet cooling would be an infeasible alternative to the current wet-only systems. Given (1) the existence of the wastewater treatment plants (WTPs) at the power plants, (2) the need to maintain a constant flow through the biological treatment portions of the WTPs, and (3) the region's hot climate, DOE concludes that the only reasonable alternative would be a wet-dry cooling system that operates primarily in the dry cooling mode on days with temperatures below 90°F (32°C) and primarily in the wet cooling mode on days with temperatures above 90°F (32°C) and that employs the current WTPs at the power plants operated at full capacity on days with temperatures above 90°F (32°C).

Information has been added to Section 2.3.2 of the FEIS to describe parallel wet-dry cooling technologies as they would be retrofit to the existing plants. Equipment and space requirements, installation requirements, downtime for installation, estimated operational split, and the dry cooling efficiency penalty are discussed in Section 2.3.2 in this context. The portion of time the plant would likely operate in the wet cooling or dry cooling modes has been estimated on the basis of meteorological conditions in the region. This cooling alternative is now analyzed in the EIS in Section 2.3.2. This alternative would result in an estimated reduction of water consumption of about 56% compared with the existing power plants' wet-only systems.

The dry-only cooling option is considered in Section 2.3.1.1 but eliminated from further analysis in the FEIS because a retrofit would be infeasible as noted above.

Key Issue 7: Scope of the EIS with respect to the gas pipeline that supplies the power plants

Several commentors stated that the gas pipeline supplying the power plants in Mexico should be included in the scope of the NEPA review.

DOE and BLM do not agree that the actions analyzed in this EIS and the actions analyzed by the Federal Energy Regulatory Commission (FERC) in its final EIS for the gas pipeline (FERC et al. 2002) are connected actions, as noted in Section 1.3.1.2 of the EIS. While the agency actions (and the regulated applicant activities) for the transmission lines on the one hand and the pipeline on the other are related and complementary, in that they all would facilitate the operation of the electricity-generating facilities in Mexico, they are independent actions that

serve distinct functions and that can proceed separately. The actions analyzed in this EIS would allow a means for the applicants to market power in the United States while the actions analyzed in the FERC EIS allow a means for U.S. natural gas to fuel several facilities in Mexico (and one in the United States), including those associated with the Sempra and Intergen transmission line projects.

Under the Council of Environmental Quality's regulations implementing NEPA, actions are connected if they:

(i) automatically trigger other actions which may require environmental impact statements.

(ii) cannot or will not proceed unless other actions are taken previously or simultaneously.

(iii) are independent parts of a larger action and depend on the larger action for their justification.

40 CR § 1508.25(a)(1)

DOE's and BLM's regulatory actions here will not affect FERC's approval of the pipeline. Each agency's action is taken pursuant to its underlying authority, and these authorities are independent of each other. Thus, DOE's and BLM's granting of the approvals necessary for the construction of electric transmissions lines under consideration in the EIS will not affect FERC's decision to allow construction of the natural gas pipeline (FERC issued a Presidential permit and a certificate for the pipeline on January 16, 2002), nor will FERC's approval of the natural gas pipeline trigger decisions by DOE to grant Presidential permits or by BLM to grant the rights-of-way (ROWs) for the transmission lines.

It is also clear that FERC's actions and the resulting applicant activities can and did proceed regardless of DOE's and BLM's ultimate decisions on Sempra's and Intergen's applications. Similarly, neither DOE's nor BLM's decisions here would affect FERC's decision. Moreover, each set of actions has utility independent of the other. The owners of the gas pipeline submitted information to FERC asserting that the pipeline would be a viable project without the Sempra and Intergen power plants and that they would proceed with the pipeline project regardless of whether DOE and BLM approve the transmission line applications.

Conversely, the DOE and BLM actions have utility independent of FERC's actions. The owners of the generating facilities have made substantial investment in the construction of the generating facilities, and it is reasonable to conclude that power will be available for export, regardless of fuel source. Furthermore, Sempra and Intergen have indicated that they have identified possible alternate sources of fuel other than gas from the gas pipeline. Thus, Sempra and Intergen would proceed with the transmission line projects (and would need the DOE Presidential permits and BLM ROWs), regardless of whether FERC had taken its actions for the new pipeline.

Key Issue 8: Characterization of air quality in terms of ambient air quality standards and exceedances

Commentors stated that the DEIS inadequately characterizes regional air quality because it presents historical air quality data only in terms of annual averages and does not present information on the frequency of episodes of high pollutant levels. They further state that tables should be added to the EIS showing the number of days per year that U.S. NAAQS have been exceeded in Imperial County and that Mexican ambient air quality standards have been exceeded in the Mexicali border region.

DOE and BLM agree that information on episodes of high pollutant levels in Imperial County should be presented in the EIS. However, as explained in Key Issue 1, the agencies do not agree that the EIS should present such information for Mexico. Section 3.3 of the EIS, "Climate and Air Quality," has been expanded with a section that discusses historical air quality in Imperial County in terms of the number of days that ambient air quality standards have been exceeded and in terms of the attainment or nonattainment status for Imperial County under the CAA regulations. A new table (Table 3.3-3) has been added to Section 3.3.2 of the EIS that shows the number of days in each of the last 7 years ending in 2003 that the NAAQS for ozone (O_3), carbon monoxide (CO), and particulate matter with a mean aerodynamic diameter of 10 μm or less (PM_{10}) were exceeded in Imperial County. Section 3.3.2 of the EIS addresses the compliance status of Imperial County.

Key Issue 9: Estimating additional violations of ambient air quality standards in Imperial County resulting from plant emissions

Commentors stated that additional violations of Federal and state ambient air quality standards would occur from the increases in air concentrations of pollutants emitted from the power plants. Some requested that the EIS determine the number of days over a given period that ambient air concentrations would have exceeded the standards when the estimated increment from the power plants is added to the recorded value for days near the standards.

Although it is possible that plant operations could lead to additional exceedances, that effect cannot properly be determined by the simple addition of the modeled increments to the historical measured ambient concentrations, because conditions that would produce the maximum estimated increment from the plants would not likely correspond to the conditions that produced the historical near-exceedances to which these values would be added.

The modeled concentration increments presented in the EIS in Tables 4.3-2 through 4.3-6 are *maximum* predicted concentration increases at any single location in Imperial County at any point in time over the 5-year review period. On the other hand, historical exceedances or near-exceedances of ambient air quality standards are actually recorded levels at one or more monitoring stations in Imperial County. The two values that would be added would in all likelihood be from two different locations under different meteorological conditions (e.g., wind direction). To meaningfully combine the modeled values and measured values, the meteorological conditions on near-exceedance days in Imperial County would have to coincide

with those that gave the maximum modeled contribution from the plants. It is very unlikely that these conditions would occur at the same time. Consequently, it is not meaningful or appropriate to add these two values to predict additional exceedance days, and additional exceedances, if any, would likely be seriously overestimated because the result would represent a very unlikely worst-case scenario rather than an expected scenario.

Key Issue 10: Estimation of secondary PM_{10} from plant ammonia and nitrogen oxides (NO_x) emissions

A commentor stated that the DEIS underestimates the secondary PM_{10} impacts caused by the power plant emissions of ammonia slip, particularly when compared with a value extrapolated by the commentor from an analysis by Dr. Steven Heisler in a supplemental declaration provided to the District Court (Heisler 2003).

DOE disagrees with the commentor's methodology and conclusions. The commentor refers to declarations provided by Dr. Heisler on behalf of the applicants. Dr. Heisler provided two declarations to the court in 2003 in which he analyzed the potential impacts of the operation of the plants on air quality. The second, supplemental, declaration was made in response to declarations made on behalf of the plaintiffs stating that his first declaration did not fully account for secondary PM_{10} resulting from plant emissions of ammonia slip. The supplemental declaration estimated a value of 1.8 $\mu g/m^3$ of secondary PM_{10} from ammonia slip for TDM alone.

The commentor linearly extrapolated a value of a 24-hour average of 9 $\mu g/m^3$ of secondary ammonium nitrate (NH_4NO_3) from both power plants, which is at least an order of magnitude higher than the estimate in the EIS of less than 1 $\mu g/mg^3$. The linear extrapolations the commentor made from Dr. Heisler's declaration are not valid because the chemical reactions involved are nonlinear. The commentor's extrapolated value of NH_4NO_3 from the Mexico power plants alone is about five times the actual measured levels (2 to 3 $\mu g/mg^3$ of NH_4NO_3 [Chow and Watson 1995]) that result from emissions of all sources in the border region.

DOE and BLM believe that the value of less than 1 $\mu g/mg^3$ of secondary PM_{10} given in Section 4.3.4.4.2 of the EIS is a reasonable estimate of the maximum expected impact from the power plants. The EIS estimate relies on an inventory of ammonia sources in the Imperial County/Mexicali region, where more than 21,000 tons (19,051 t) of ammonia are emitted annually, to conclude that the area is ammonia rich. In ammonia-rich areas, the addition of relatively small amounts of ammonia from the power plants would be expected to result in only small, if any, additional secondary PM_{10} formation due to the large amount of ammonia already existing in the air. It is NO_x emissions, however, that can react in the atmosphere to form nitric acid (HNO_3), which could then combine with the ammonia in the atmosphere to produce additional NH_4NO_3, which might potentially contribute to secondary PM_{10}. Thus, the DEIS estimates the formation of secondary PM_{10} production from plant NO_x emissions rather than from ammonia emissions.

To produce the estimate in the DEIS, DOE obtained a conversion factor for PM_{10} production from NO_x from a study in the San Joaquin Valley (Stockwell et al. 2000). The EIS estimate is very conservative, that is, greatly overestimates secondary PM_{10} produced, because the higher temperatures and lack of humidity in Imperial Valley (compared with the San Joaquin Valley) are less favorable for NH_4NO_3 production; thus, substantially less PM_{10} would be formed in the hotter and drier Imperial Valley. This conclusion was evaluated in light of a study by Chow and Watson (1995) of the actual PM_{10} composition in Imperial County air. The Chow and Watson study measured actual NH_4NO_3 in the region and concluded that the total concentration of secondary PM_{10} formation was quite low (in the range of 2 to 3 $\mu g/m^3$ for 24-hour measurements). Thus, even though (1) the area is ammonia rich, and (2) there are already thousands of tons of NO_x emissions in the region per year, the Chow and Watson study supports the EIS conclusion that the addition of NO_x emissions from the power plants (of approximately 500 tons [454 t] per year) would result in the formation of little, if any, secondary PM_{10}.

The analysis presented in the EIS (Section 4.3.4.4.2) is different from the analysis conducted by Dr. Heisler. In conducting a conservative analysis covering only a 2-year period of operations, Dr. Heisler used a conservative approach with respect to the conversion of ammonia emitted from the plants to PM_{10}, that resulted in a finding that more than 30% of the ammonia emitted from the power plants would be converted to PM_{10}. Such a high conversion rate would not be expected in an ammonia-rich area, such as the Imperial Valley-Mexicali region, as the Chow and Watson study indicates. There were no changes made to the EIS as a result of this comment.

Key Issue 11: Characterization of ozone and PM_{10} episodes in Imperial County

Several commentors noted that the DEIS characterized ozone and PM_{10} conditions in Imperial County mainly in terms of annual arithmetic means of ambient concentrations and that this approach does not allow the evaluation of the frequency of high ozone episodes. They further noted that the characterization of ozone and PM_{10} conditions in Imperial County must consider and evaluate contributions of these pollutants from Mexico, which they state are a major cause of pollution episodes in Imperial County.

As discussed under Key Issue 8 regarding pollution episodes, DOE and BLM have added a summary of the number of days that Federal and State ozone and PM_{10} standards have been exceeded in Imperial County in Table 3.3-3. With respect to ozone transport from Mexico, the EIS now references (Section 3.3.2) the 1993 California Air Resource Board report mentioned in comments that identifies Mexicali as a contributor to ozone episodes in Imperial County (ARB 1993). The EIS further notes that the EPA has attributed the ozone nonattainment status of Imperial County in part to contributions from Mexico. However, as discussed in the following paragraph, high PM_{10} episodes in Imperial County are not similarly linked to sources in Mexico. The EIS makes no determination of the source of PM_{10} episodes in Imperial County as such a determination is not needed for the assessment of project impacts.

Contributions from Mexico are no longer regarded as the cause of PM_{10} NAAQS exceedances in Imperial County. On October 9, 2003, the Ninth Circuit Court of Appeals vacated an EPA finding to the effect that "but for contributions from Mexico," Imperial County would have attained the PM_{10} standard, finding that "…based on the data…there is simply no possibility that Mexican transport could have caused the observed PM-10 exceedences…." *Sierra Club v. U.S. EPA*, 352 F.3d 1186 (9th Cir. 2003). The court specifically directed the EPA to reclassify Imperial County as a serious nonattainment area for PM_{10} effective September 2004. On August 11, 2004, the EPA published a Final Rule that reclassified the Imperial Valley from a moderate to a serious PM_{10} nonattainment area, and also signed a proposed rule to find that the Imperial Valley Planning Area failed to attain the NAAQS for PM_{10} by the serious area statutory deadline of December 31, 2001.

Key Issue 12: Discussion of the uncertainty and sensitivity of the DEIS ozone analysis using the EPA's O_3 Ozone Isopleth Plotting Program Revised (OZIPR) methodology; and description of the methodology

Several commentors addressed the ozone modeling analysis presented in the DEIS. Some commentors expressed the view that ozone modeling and the precise quantification of potential ozone impacts are difficult exercises and that the limitations and uncertainties of the modeling analysis should be clearly disclosed in the FEIS. Other commentors stated that the DEIS conclusion that ozone levels may decrease with increases in NO_X seemed counterintuitive or inconclusive at best. Finally, one commentor stated that contrary to the conclusions in the DEIS, the Imperial County-Mexicali area is not volatile organic compound (VOC)-limited, and that scatter plots used in the DEIS do not support this conclusion, further indicating that the ozone modeling was incorrect.

The DEIS relied on the EPA-approved OZIPR modeling to assess potential ozone increases in the United States from precursor emissions (primarily NO_X and VOC) from the power plants operating in the Mexicali area. The purpose of the OZIPR modeling was to characterize the maximum *influence* of emissions from the Mexico power plants on maximum possible ozone levels at the maximum receptor point in the United States. The overall approach drew from the best available data and considered, to the extent possible, relevant factors and drivers, such as meteorological conditions, power plant and regional emissions of ozone precursors, and VOC speciation. The DEIS also relied upon historical data to corroborate the modeling conclusion that the Imperial County-Mexicali area is similar to a region where ozone formation is VOC-limited, not NO_X-limited (i.e., ozone levels are much more sensitive to changes in VOC emissions than to changes in NO_X emissions). Regardless of the historical information, the OZIPR model results reported in the DEIS indicated that operation of the power plants was not expected to result in any meaningful decrease (or increase) in ozone levels (Section 4.3.4.4.2).

On the basis of the public comments, the agencies reevaluated the use of the historical data (presented in the DEIS as scatter plots in Section 4.3.4.4.2) to show whether Imperial County is VOC-limited. The agencies agree with the commentors that the scatter plots presented in the DEIS may not in and of themselves support the conclusion that ozone formation in the

area is VOC-limited, and the scatter plots have been removed from the EIS. The EIS notes that a determination that the modeled area is VOC-limited is not a necessary precondition for obtaining the results of the ozone analysis presented by using the OZIPR model. Those results, now shown in Figure 4.3-1, are nevertheless consistent with a VOC-limited situation, where O_3 levels can respond to changes in VOC, but are relatively unresponsive to changes in NO_x.

The agencies have updated the ozone modeling conducted for the DEIS with additional emissions data from Mexico that have become available since the DEIS was issued. The results of the updated modeling are discussed in Section 4.3.4.4.2 of the EIS and are consistent with earlier results and the conclusions presented in the DEIS.

The FEIS also includes the results of a sensitivity analysis performed by the OZIPR ozone modeling to test the model results (by varying the value of the input in order to see the degree of effect on the model output), as described in Section 4.3.4.4.2 and Appendix G. This analysis indicated that the model was fairly insensitive to changes in the values of inputs for which only default values were available, while it determined a reasonably maximum range of results for all ranges of input values. The sensitivity analysis results further support the conclusion in the EIS, that emissions from the power plants will not lead to meaningful increases or decreases in O_3 concentrations in the region.

Key Issue 13: Estimates of additional adverse health impacts

Numerous commentors raised concerns that power plant emissions would raise levels of asthma and other respiratory conditions and that the EIS did not adequately characterize health impacts in Imperial Valley. Also, two commentors provided estimates of additional health impacts in Imperial County that would result from estimated increases in PM_{10} concentrations caused by power plant operations. These estimates are reviewed in the response to Comment 0008-001 in Chapter 4 of this volume. The DEIS did not provide estimates of the number of additional cases of adverse health impacts that would be expected from plant operations, but noted that the number of such cases would be small.

In response to comments, DOE and BLM have performed an independent estimate of the number of additional asthma hospitalizations that could be associated with PM_{10} emissions from the power plants. The estimated maximum increase in asthma hospitalizations in Imperial County is two to three cases per year out of a base of 323 cases per year. This result, however, is an overestimate because it uses the maximum PM_{10} increment in Imperial County from power plant emissions determined in the air dispersion modeling in Section 4.3.4.4.2 of the EIS as an exposure concentration. This value of 2.45 $\mu g/m^3$ taken from Table 4.3-4 represents a maximum increase for a 24-hour average for any location in the county over a representative 5-year period of meteorological conditions. Because the increase in the annual average concentration of PM_{10} in the county, which should be used in estimates of health impacts, is estimated to be 0.11 $\mu g/m^3$ (Table 4.3-4), the actual number of additional asthma cases is expected to be less than one per year. The results of this analysis have been added to the health impacts discussion in Section 4.11.4.2 of the FEIS.

Key Issue 14: Documentation of total dissolved solids (TDS) removal in power plant water treatment systems

One commentor noted that the DEIS does not identify the specific physical or chemical process responsible for removing TDS from the water in the wastewater treatment plants at the power plants.

In response, DOE and BLM have added a brief discussion of the physical and chemical processes involved in the removal of TDS from the input water in Section 2.2.2 of the EIS. These processes, mainly the biological treatment units and the lime softeners, are designed to treat water to make it suitable for plant uses. The major use is for cooling in the steam cycle. Cooling water must be treated to remove dissolved solids, such as calcium and magnesium, that can precipitate and form scale in the cooling system. These constituents of the intake water contribute to TDS. Thus, while the primary function of the water treatment system is not to remove TDS per se, the system removes a portion of TDS nonetheless. The TDS removal processes are discussed in detail in the response to Comment CAL08-008 in Chapter 4 of this volume.

Key Issue 15: Analysis of power plant impacts on the regional 4,000-mg/L TDS surface water objective

Several commentors noted that the salinity of the New River currently equals or surpasses the Colorado River Basin water quality objective of 4,000 mg/L at its outlet to the Salton Sea, and that the DEIS does not provide an estimate of the effect of the power plants' discharge on TDS at this location. One commentor stated that operation of the power plants will exacerbate the degree of noncompliance with this water quality objective.

As a legal matter, the Colorado River Basin water quality objective does apply to discharges from the power plants in Mexico. In addition, as discussed in Section 3.2.1.1.2 of the EIS, TDS in the New River increases in the downstream direction (i.e., north, toward the Salton Sea). A large portion of this increase in TDS is due to agricultural inflows into the New River. The 4,000-mg/L annual average water quality objective, however, exempts discharges from agricultural sources from the water quality objective.

In any event, in response to the public comments, DOE and BLM conducted a further review and found 27 measurements that were made at the outlet of the New River between January 1996 and March 1998 (IID 2002). The average TDS at the outlet was approximately 2,770 mg/L, with a standard deviation of about 360 mg/L. The highest concentration measured was about 3,700 mg/L.

A summary of these measurements and findings is incorporated in Section 4.2.4.1.2 of the FEIS to provide a more complete discussion of water quality issues for the New River. In the same section, an estimate of a maximum increase in TDS at this location of 58 mg/L as a result of both power plants operating compared with no plants operating has been added. The FEIS

concludes that TDS in the New River would be well below the 4,000-mg/L annual average Colorado River basin water quality objective.

Key Issue 16: The use of the second circuits on the respective transmission lines

Commentors suggested that construction of the two transmission line projects, each with a second circuit that is not required to handle the load from the current plants, can only imply that additional plants will be added and will use the second lines.

DOE and BLM disagree with this conclusion. First, Sempra and Intergen have stated in letters to DOE that the second circuit was strung at the same time as the first circuit was being built in order to minimize costs and construction impacts. Both companies also stated that they have no plans to build additional power plants and only intend to use these extra circuits when the primary circuits are down for repairs and maintenance. Second, as stated in the cumulative impacts discussion of the EIS (Section 5), DOE has not identified any reasonably foreseeable specific plans for additional power plants in the region.

Key Issue 17: The applicability of conformity review to direct PM_{10} emissions from the Mexico power plants and to indirect PM_{10} emissions from dry lakebed at the Salton Sea exposed as a result of consumptive water use at these plants

One commentor has stated that the conformity analysis described in the DEIS needs also to encompass both the direct PM_{10} emissions from the power plants in Mexico and indirect PM_{10} emissions from lakebed at the Salton Sea that may be exposed by water use at these plants.

DOE and BLM do not agree that these emissions should be included in the conformity analysis for the reasons given below. Under Section 176(c) (1) of the CAA, and in accordance with EPA implementing regulations, 40 CFR Parts 51 and 93, Subpart B, Federal agencies must ensure that their actions conform to the appropriate State Implementation Plan for achieving compliance with the NAAQS. The EPA's conformity regulations (which have been adopted in Rule 925 by the Imperial County Air Pollution Control District) establish applicability thresholds based on emissions of criteria pollutants attributable to a Federal action that takes place in a nonattainment or maintenance area, 40 CFR § 51.853(b)(1). However, an EPA guidance document (EPA 1994) regarding the implementation of the conformity regulations makes clear that emissions originating outside of the United States are excluded from analysis (even if they may affect ambient air quality within the United States). Because the power plants are located in Mexico, emissions from the plants are not included in DOE's conformity analysis.

Likewise, particulate emissions from exposed lakebed of the Salton Sea are not considered in DOE's conformity analysis. The conformity rules state that "a conformity determination is required for each pollutant where the total of direct and indirect emissions in a nonattainment or maintenance area caused by a federal action would equal or exceed" the specified thresholds, and where, as here, the emissions are considerably less than 10% of the regional emissions, 40 CFR § 51.853(b). Particulate emissions from exposed Salton Sea lakebed

do not meet the definition of either "direct" or "indirect" emissions under the conformity regulations. Direct emissions are "caused or initiated by the Federal action and occur at the same time and place as the action," 40 CFR § 51.852. Indirect emissions are defined as emissions (1) that "are caused by the Federal action, but may occur later in time and/or may be farther removed in distance from the action itself but are still reasonably foreseeable;" and also (2) that "the Federal agency can practicably control and will maintain control over due to a continuing program responsibility of the Federal agency" (Id.).

Emissions from the Salton Sea lakebed would not occur at the same time and place as the construction and operation of the transmission lines and therefore cannot be considered direct emissions. Even insofar as particulate emissions from the Salton Sea lakebed are indirectly attributable to the operation of the transmission lines, neither DOE or BLM is in a position practicably to control such emissions nor does either agency have any continuing program responsibility that extends to the monitoring or controlling of lakebed conditions at the Salton Sea. Particulate emissions from the Salton Sea lakebed therefore also do not meet the definition of indirect emissions.

In any event, as described in Section 4.3.4.4.4 of the FEIS, estimated particulate emissions from exposed Salton Sea lakebed resulting from water usage by the power plants (and corresponding reduced flows to the Sea) would be less than 10 tons (9 t)/yr, far below the applicable 70-ton/yr (64-t/yr) threshold under the conformity rules.

Key Issue 18: Conservatism in the analysis and interpretation of impacts

One commentor noted that many of the estimates of impacts in the EIS employ conservative assumptions that result in an overestimation of impacts and that such conservatism should be pointed out in the EIS.

DOE and BLM acknowledge that a good deal of conservatism is built into the analyses in the EIS. While the conservatism is usually noted in the discussion of the various methodologies used to assess impacts, it is generally not summarized in the discussion and interpretation of results. Because impacts as conservatively analyzed are small, it is not necessary to estimate the level of conservatism in the analyses for the purposes of this EIS.

Conservatism in analysis affects mainly the air and water impact evaluations. With respect to water, for example, under actual plant operations, less water is evaporated for cooling than the amount assumed in the DEIS analysis, which is based on a 100% capacity factor, thereby reducing the computed negative impacts on salinity in the New River and Salton Sea. The fact that less TDS is removed by the WTPs at the plants under actual operations is now noted in Section 4.2.4.1.2 of the EIS.

With respect to the air impacts, conservative assumptions affect several elements of the analysis leading to estimates of increases in ambient air concentrations of air pollutants in Imperial County. The assumption that power plants operate at full capacity all of the time overestimates the quantity of emissions that would actually be expected to occur under normal

operations. Similarly, pollutant emission rates are conservatively based on maximum permitted rates or vendor guarantees of the effectiveness of pollution control equipment, both of which exceed actual expected emission rates. With regard to the air dispersion modeling, concentration increases reported in the DEIS are the maximum concentration at any location on the modeling grid (border region) at any time over a 5-year modeling scenario based on historical meteorological conditions. Typical or average concentration increases at a given receptor location in Imperial County would be expected to be far less than these estimates, and for a significant fraction of time, they would be expected to approach zero. For this reason, estimates of health impacts to a given population must be viewed with care, since data on concentrations of air pollutants (e.g., PM_{10}) from the air impacts analysis greatly overestimate actual exposures over time to residents in the region.